



PROVINCIAL DEPARTMENT OF EDUCATION NORTH WESTERN PROVINCE

# THIRD TERM TEST - 2018

Grade 09

## MATHEMATICS

Two 2½ Hours

Name / Index No. :

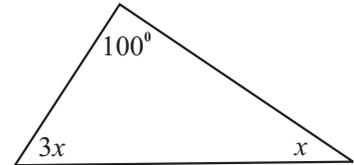
### PART - I

- Answer question number 01 to 20 on this paper itself. Correct answer for each question carries 02 marks.

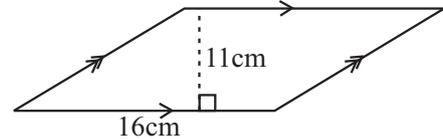
01. 73.568 (i) Round off to the nearest second decimal place.  
(ii) Round off to the nearest whole number.

02. Solve the equation.  $\frac{8 + 3x}{4} = 5$

03. Find the value of  $x$  according to the data given in the diagram.



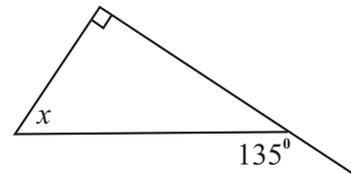
04. Find the area of the parallelogram given in the diagram.



05. If  $A = \{2, 3, 5, 7\}$  and  $B = \{2, 4, 6, 8\}$  write the set  $A \cap B$ .

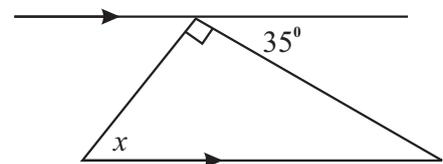
06. Write  $10101_{\text{Two}}$  as base ten number.

07. Find the value of  $x$  according to the data given in the diagram.



08. Find the factors of  $x^2 + 3x - 28$

09. Find the value of  $x$  according to the data given in the diagram.



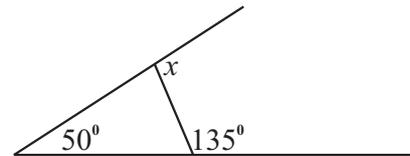
10. Find the value of  $x^2 - 4x + 8$  when  $x = 5$

11. Simplify  $\frac{(3^2)^4}{3^5}$

12. There are two boys and three girls in a debate team. What is the probability of selected student being a boy for the leader of team?

13. Find the 6<sup>th</sup> term of the number pattern with common term  $7n - 8$ .

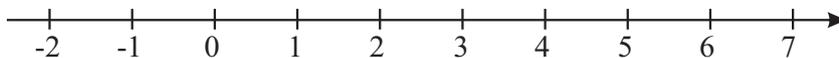
14. Find the value of  $x$  according to the data given in the diagram.



15. Simplify.  $\frac{3a}{5} + \frac{2a}{3}$

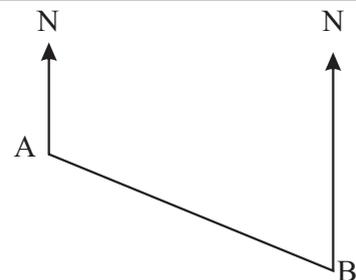
16. 12% discount is given from the marked price when selling an electric oven. What is the amount have to pay to buy oven if marked as Rs. 9000?

17. Solve the inequality  $3 + x \geq 5$  and represent the solution set on the following number line.

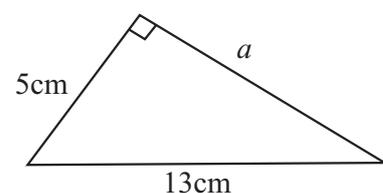


18. Simplify.  $\frac{5a - 3}{6} - \frac{3a + 2}{6}$

19. Bearing of B from A is  $120^\circ$ . Find the bearing of A and B.



20. Find the value of  $a$  according to the data given in the diagram.



- Write the answer to first one and four other questions.

(16 marks are given to the first one and 11 given to the each other questions.)

01. (a) Following table represents consumption of water of 50 houses.

Number of water units used in a day	33	34	35	36	37	38	39
Number of houses	4	5	7	10	11	8	5

According to the frequency distribution

- (i) Find the range (02 marks)  
 (ii) mode (01 mark)  
 (iii) median (02 marks)  
 (iv) Completing following table find the mean number of water units used by house in a day.  
 (Copy the table in to answer script) (05 marks)

Number of water units used (X)	Number of houses (f)	fx
33	4	132
34	5	.....
35	7	.....
36	10	.....
37	11	.....
38	8	.....
39	5	.....
Total	.....	.....

- (b) The marks obtain by grade 9 students for second term test is given below.

34 39 41 48 68 32 39 41 48 66  
 70 75 80 81 81 21 36 39 41 52  
 29 28 36 38 40 41 42 45 53 56

- (i) Copy the following table into your answer script and taking class intervals as 20-29, 30-39, 40-49 prepare a ground frequency distribution (04 marks)

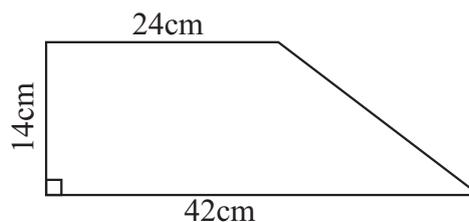
Class interval	Tally mark	Frequency

Using frequency distribution above,

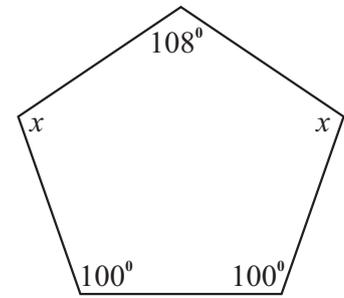
- (ii) Find the model class (01 mark)  
 (iii) Find the median class (01 mark)

02. Namali decided to cut out a circular lamina from the trapezium shape piece of card board with her hand.

- (i) What the radius of the largest circle that she can cut? (02 marks)  
 (ii) Calculate the area of that circle. (03 marks)  
 (iii) Calculate the area of the remaining part after cut the circle. (04 marks)  
 (iv) Express in simplest form the ratio between areas of the trapezium and circle. (02 marks)



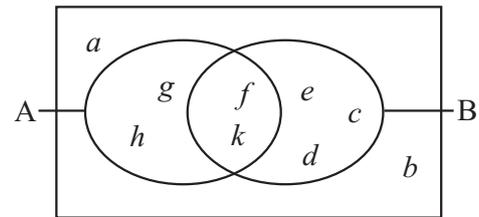
03. (a) Find the value of  $x$  according to the data given in the diagram. (03 marks)



- (b) The interior angle of a regular polygon is four times as the exterior angle.
- (i) Find the magnitude of an exterior angle. (03 marks)
  - (ii) Find the magnitude of an interior angle. (02 marks)
  - (iii) How many sides are there in this polygon? (02 marks)
  - (iv) What is the name of the polygon? (01 mark)

04. (a) Write the following sets with elements using the Venn diagram given.

- (i)  $A$  (02 marks)
- (ii) (02 marks)
- (iii)  $A \cap B$  (02 marks)
- (iv)  $A \cup B$  (02 marks)
- (v)  $B'$  (02 marks)



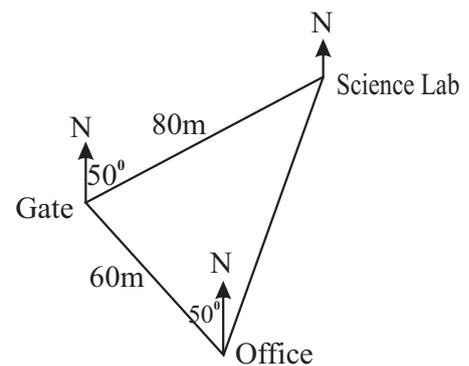
(b) A and B are two disjoint sets in a universal set. Represent this information in Venn diagram. (01 mark)

05. There are 7 equal cards of same shape and size numbered as 1, 2, 3, 4, 5, 6, 7 inside a box. Thilina obtains a card at random.

- (i) Write the sample space (S). (03 marks)
- (ii) What is  $n(S)$ ? (02 marks)
- (iii) Write the elements of A and find  $n(A)$ . (02 marks)
- (iv) Find the  $p(A)$  probability of A. (02 marks)
- (v) Find the probability of obtaining a number not less than three. (02 marks)

06. The following rough sketch represents the location of office and laboratory from the school gate.

- (i) What is the instrument prepared to find the bearing in the school? (01 mark)
- (ii) What is the bearing of office from the gate? (02 marks)
- (iii) Draw a scale diagram by taking the scale of 1 : 10 (05 marks)
- (iv) By using the scale diagram find the bearing and distance to the Science lab from the gate. (03 marks)



07. Incomplete table of values to draw the graph of the function  $y = 3x - 2$  is given below.

- (i) Fill in the blanks in the table. (02 marks)
- (ii) Draw the graph of the function on a suitable Cartesian plane. (03 marks)
- (iii) Write the gradient and intercept of the function. (02 marks)
- (iv) Draw the straight line parallel to the above line and passing through the point (2,0) on the above graph. (02 marks)
- (v) Write the equation of the line drawn (iv) above. (02 marks)

x	-1	0	1	2	3
y	-5	...	1	...	7